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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,045	01/14/2004	Kuan Liang	500-008	4841
24002 7590 03/14/2007 ANTHONY R. BARKUME 20 GATEWAY LANE MANORVILLE, NY 11949			EXAMINER KOSTAK, VICTOR R	
			ART UNIT 2622	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/14/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/757,045

Applicant(s)

LIANG ET AL.

Examiner

Victor R. Kostak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wredenhagen et al.

Wredenhagen converts an interlaced image into progressive format (e.g. col. 1 lines 4-8; Fig. 4) and incorporates removal of noise of various kinds common to the conversion process, including feathering or sawtooth edge reduction (e.g. col. 3 lines 45-53; col. 4 lines 20-21). Wredenhagen operates on plural consecutive fields (current and previous) to distinguish actual edges from feathers or sawteeth (e.g. col. 7 lines 18-25), and uses windows (e.g. col. 7 lines 31-36) that can vary in size in order to judge if the detected edges are image content or noise (noting further edge structure detector stage 406 (col. 8 lines 40-44)). A first judgment involves edge detection, and a subsequent judgment involves edge identification, and threshold adjustment is applied in the window searching (col. 14 lines 22-31) to improve sawtooth edge identification. Wredenhagen further points out that larger windows are to be used (col. 14 lines 47-50).

Although Wredenhagen discloses using two consecutive fields, it would have been obvious to one of ordinary skill in the art to (1) recognize that since the video signal is a continuous series of plural fields, then plural fields beyond two would be used for edge identification for the entirety of the incoming video signal that comprises an extended series of fields; and (2) that using more than two fields would provide better edge identification by virtue of having more image data available for analysis, thereby meeting claim 1.

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Claim 2 describes pixel positions designated in the image plane and relationships used in the edge identification, and Wredenhagen also designates positions and relationships between points (though not exactly by the same designations) in col. 13 lines 28-67, which he says is an example of how feathering detection can be defined. Included are differences in pints values and comparison to thresholds.

As for claim 3, Wredenhagen points out that the variable window search can be used to identify the left edge (col. 13 lines 60-62), which although not expressly stated, suggests that the other (right) edge would have been obvious to identify as well using a related procedure.

Regarding claim 4, the left edge can be identified, as noted previously.

As for claim 5, it would have been obvious to one of ordinary skill in the art to apply masking to both edges where maximum values indicate such edges, to thereby reduce the sawtooth or feathered appearance.

Regarding claims 6 and 7, Wredenhagen uses expanded and variable windows, as noted previously, which windows are used to determine the left edge (as explicitly disclosed), and would have been obvious to use in detecting and smoothing out the counterpart right edge.

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor R. Kostak whose telephone number is (571) 272-7348.

The examiner can normally be reached on Monday - Friday from 6:30am-3:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**Or faxed to:**

**(571) 273-8300**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is (703) 308-HELP.



Victor R. Kostak  
Primary Examiner  
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